

REMARKS

The amendments and remarks herein are submitted in response to an Advisory Action dated March 3, 2005, where the applicants were informed that the previously submitted amendments, dated February 22, 2005, would not be entered. The amendments and remarks in this response are made in reference to the claims as examined in the Office Action made Final dated December 16, 2004. Claims 1 – 12 and 14 - 20 are pending in the present application and stand rejected. Amendments to claims 1, 14, and 20 herein are made to place the application in better condition for allowance. Applicants respectfully request reconsideration of this application as it is believed to be in condition for allowance.

At the outset, Applicants note that the new limitations to claims 1, 14, and 20 do not introduce new matter. At paragraph [0002] of the specification as originally filed, it is stated that it is desirable to pump cement slurries downhole to form a cement sheath that provides zonal isolation, as it is critical to prevent upward water flows, through and along the cement sheath fluid and to prevent exchange between and among formation layers through which the wellbore passes. In the specification as originally filed at “Example 3” in “Table 3” and paragraphs [0038] and [0039], it is clearly illustrated that cement slurries according to the invention have a gel strength transition time from 100 to 500 lbf/100ft² of up to about 90 minutes.

Claims 1 – 9, 11, 14 – 15, and 18 are pending in the present application and stand rejected as being unpatentable under 35 U.S.C. §103(a) over Marrast et al. (U.S. Patent No. 3,926,257) in view of Arfaei et al. (U.S. Patent No. 5,348,583). Claims 1 and 14 are amended herein. Dependent claims 2 – 9 and 11 depend upon amended claim 1, and dependent claims 15 and 18 depend upon amended claim 14. Insofar that the examiner may still maintain the rejections to the claims as amended, Applicants respectfully traverse the rejections.

Applicants respectfully point out that the teachings in Marrast are limited to cementing processes which prevent gas diffusion through a cement (column 1, lines 4 - 9) where the gas

diffuses through the cement and displaces water thus creating channels (column 1, lines 20 – 25), and where the processes are directed to the formation of a foam barrier in the ground in the vicinity of a well by the incorporation to the cement slurry itself of a foaming agent, that may result in the formation of foam within the pores of the cement during the setting thereof as gas tends to diffuse or flow through this cement, before complete setting thereof (column 1, lines 51 - 62). Marrast further teaches that the presence of foam within the pores results in a strong reduction of the gas permeability, by creating a foam barrier (column 1, lines 63 – 65). Arfaei et al. teaches cementing admixtures comprising a set-accelerating compound and certain low molecular weight glycols effective in reducing the set time of hydraulic cement compositions (column 2, lines 37 – 40), and that the initial set times are reduced to periods as low as 3.74 hours (column 6, line 23).

Applicants' claims are drawn to methods for preventing water flows during the cementing of a borehole, where the temperature is about 40°F to about 75°F, using a mixture comprised of water, hydraulic cement, a dispersant, and a set-accelerating admixture comprising an alkali or alkaline earth metal nitrate and an alkali or alkaline earth metal nitrite, and wherein the slurry has a transition time from 100 to 500 lbf/100ft² of up to about 90 minutes. The transition times claimed by the applicants, or times for the cement slurry to set up to the extent that water flows are prevented, are only a minor fraction of the minimum set up time provided by the composition taught in Arfaei. Further, using a cementing process that incorporates a foaming agent to prevent gas displacement of water, and thus gas migration, will not result in a cementing method that prevents water flows by using significantly shorten gel strength transition times. Thus, combining the cementing processes taught in Marrast with the cement compositions taught in Arfaei would not provide cementing methods according to the present invention.

Claims 1 – 10, 13 and 14 - 16 are pending in the present application and stand rejected as being unpatentable under 35 U.S.C. §103(a) over Marrast in view of the prior sale of “PolarSet®” (as documented in “CEITEC Evaluation Plant for Low-Temperature Concrete Admixtures”).

Claims 1 and 14 are amended herein. Dependent claims 2 – 10 and 13 depend upon amended claim 1, and dependent claims 15 - 16 depend upon amended claim 14. To the extent that the examiner may still maintain the rejections, Applicants respectfully traverse the rejections. As described above, Marrast is limited to cementing processes which prevent gas diffusion which are directed to the formation of a foam barrier by using a foaming agent, that may result in the formation of foam within the pores of the cement. Marrast does not teach or suggest in any way, the use of a dispersant in the cement slurry to shorten the gel strength transition time to prevent water flows. Hence, combining the teachings of Marrast with the set accelerator described in the cited “PolarSet®” documentation would not result in the cementing methods of the present invention.

Claims 11, 12, and 17 stand rejected as being unpatentable under 35 U.S.C. §103(a) over Marrast in view of the prior sale of “PolarSet®” as applied to claims 1 and 10, and in further view of “PolarSet® Product Information”. Dependent claims 11 and 12 depend upon amended claim 1, and dependent claim 17 depends upon amended claim 14. To the extent that the examiner finds the rejections applicable, Applicants respectfully traverse the rejections. As described above, Marrast does not teach or suggest in any way, the use of a dispersant in the cement slurry to shorten the gel strength transition time to prevent water flows. Hence, combining the cementing processes of Marrast with the teachings in the cited “PolarSet® Product Information” would not result in the cementing methods of the present invention.

Claim 19 was rejected as being unpatentable under 35 U.S.C. §103(a) over Marrast in view of Arfaei as applied to claim 14, and further in view of WO 00/29351. Claim 19 depends upon amended claim 14. Insofar the examiner still maintains the rejection, Applicants respectfully traverse the rejections. As described above, combining the cementing processes taught in Marrast with the cement compositions taught in Arfaei would not provide cementing methods according to the present invention.

Claim 20 was rejected as being unpatentable under 35 U.S.C. § 103(a) over WO 00/29351 in view of the prior sale of "PolarSet®" (as documented in "CEITEC Evaluation Plant for Low-Temperature Concrete Admixtures"). Claim 20 amended herein. To the extent that the examiner still maintains the rejection, Applicants respectfully traverse the rejections. WO 00/29351 teaches cementing composition which comprise dispersants that have a retarding effect on cement setting time which must be compensated for (column 3, lines 2-4). Hence, combining the cementing compositions taught in Marrast with the set accelerator described in the cited "PolarSet®" documentation would not result in the cementing methods of the present invention.

Applicants intend this paper to be a full response to the office action dated December 21, 2004. It is submitted that the claims now pending in this application are in better condition for allowance. Applicants respectfully request reconsideration of the application and claims and its allowance. If the Examiner believes that the prosecution of the application would be facilitated by a telephone interview, Applicants invite the Examiner to contact the undersigned at 281-285-8606. The Commissioner is hereby authorized to charge any fees that may be required, or credit any overpayment, to Deposit Account 04-1579 (56.0615).

Respectfully submitted,



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